Embedded Generation via Rotating Machine LV Connection >30 kVA and ≤1,500 kVA

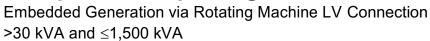


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Certification	
CX Ref #: Energex WR#:	
Date: I I	
Embedded Generation via RM > 30 kVA and ≤ 1,500 kVA – Project Name: Location:	
I certify that as a Registered Professional Engineer of Queensland and by virtue that the submission documentation complies with the requirements of the late	
 Energex's Technical Study Report provided for the above stated pr STNW1174 - Standard for LV Embedded Generating Connections AS/NZS 3000 - Electrical Installations AS 60034.1 Rotating electrical machines, Part 1: Rating and perfor AS 60034.22 Rotating electrical machines, Part 22: AC generators combustion (RIC) engine driven generating sets. Queensland Electricity Connection Manual [version] 	[version]
In addition to the above, the following attachments have been submitted as p	part of the application:
 Attachment 1 – Engine/Turbine/Alternator Specifications & Checklis Attachment 2 – Compliance Checklist Attachment 3 – Commissioning Test Results Attachment 4 – As Commissioned Drawings 	st
Signature:	
	RPEQ Engineer Name
	Registration Number
	Professional Title
	Company Name
	Company Address

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Contact Details





All questions in each applicable section must be answered.

Attachment 1 – Rotating Machine Specifications & Checklist

Installation details	Data
Customer Name	
Customer contact details	
Ergon Energy contact	
Installation approved capacity (kVA)	
Installation approved export (kW)	
Installed capacity (kVA) (Must not exceed approved limit)	
Installed export power limit (kW) (Must not exceed approved export)	
Subject description (plant information) e.g. PV export installation at shopping village	

As installed - Engine Technical Data

Parameters	Data
Engine/Turbine type	
Make	
Model	
Rated Power (kWe/kWm)	
Rated Voltage (V)	
Rated Current (A)	

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Embedded Generation via Rotating Machine LV Connection >30 kVA and ≤1,500 kVA



All questions in each applicable section must be answered.

As Installed - Alternator Technical Data

As installed. Alternator reclinical bata						
Parameters	Data					
Make						
Model						
Rated Power (kVA)						
Rated Current (A)						
Rated Voltage (V)						
Peak Short Circuit Current (kA)						
Manufacturer's specification data sheet/user manual attached As Installed Congreting System	Yes No					
As Installed – Generating System						
Description	Tested by:					
Complies with AS 60034.1, AS 60034.22	Yes No No					
Comments (please supply additional information for any non-compliances)						
Single Line Diagram (SLD) attached	Yes No No					
Existing Onsite Embedded Generating Systems						
Existing Installation details*	Data					
Types						
Capacity						
*Prior to this application						

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Embedded Generation via Rotating Machine LV Connection >30 kVA and ≤1,500 kVA



All questions in each applicable section must be answered.

Attachment 2 – Compliance Checklist

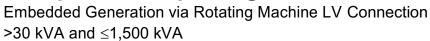
Description	Complies	If No, supply details
Voltage Fluctuation and Flicker	Yes 🗌 No 🗌	
Export Requirements	Yes 🗌 No 🗌	
Special Instructions	Yes 🗌 No 🗌	
Fluctuation and Harmonic Allocations	Yes 🗌 No 🗌	
Power Factor Limits	Yes 🗌 No 🗌	

Compliance with Standard for LV EG Connections

Clause	Description		Complies		
4.3	Stand-by hours limit compliance (if applicable)	Yes 🗌	No 🗌	N/A 🗌	
4.3.1.3	Power limiting (for partial-export and non-export systems only)	Yes 🗌	No 🗌	N/A 🗌	
4.7.2, Table 8	Protection device compliance, GPR functionality and settings	Yes 🗌	No 🗌	N/A 🗌	
4.7.2.4, 4.7.6.2	Loss of mains, NVD and backup anti-islanding protection	Yes 🗌	No 🗌	N/A 🗌	
4.7.2.6	Power limit protection	Yes 🗌	No 🗌	N/A 🗌	
4.7.3	Interlocking (if applicable)	Yes 🗌	No 🗌	N/A 🗌	
4.7.5	Re-energisation and synchronisation	Yes 🗌	No 🗌	N/A 🗌	
4.7.6.1	Standards compliance	Yes 🗌	No 🗌	N/A 🗌	
4.7.6.2	Exemptions (please list relevant exemptions authorised for this installation)	Yes 🗌	No 🗌	N/A 🗌	
4.10.1.1 – 4.10.1.5	Power Quality	Yes 🗌	No 🗌	N/A 🗌	
4.10.3	Power Control Mode settings	Yes 🗌	No 🗌	N/A 🗌	
6	Commissioning	Yes 🗌	No 🗌		

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All guestions in each applicable section must be answered

All questions in each applicable section must be answered.						
Clause	Description	Complies				
7	Operation and maintenance	Yes No No				
Commonts						
Comments (please supply additional information for any non-compliances and settings as required)						
Commissioni	ng results attached Y	es □ No □				

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All questions in each applicable section must be answered.

Attachment 3 – Compliance Report – Commissioning

Commissioning shall include the following information and test certificates are recommended for further evidence:

Compliance with Standard for LV EG Connections

System Details	Complies	Data, provide details (attach docs if required)
Installed system meets all criteria outlined in the Energex's Technical Study Report issued for project	Yes No No	

Rotating Machine

System Details	Complies	Data, provide details (attach docs if required)
AC Output Voltage from inverter on commissioning	Yes No No	
Input and Output power from rotating machine on commissioning	Yes No No	
Re-energisation and synchronisation as per standard	Yes No No	
Rotating machine performed as per approved Operating type (Clause 4.3)	Yes No No	

Protection

System Details	Complies	Data, provide details (attach docs if required)
Tripping and control scheme logic	Yes No No	
Instrument transformer ratios	Yes No No	
GPR details (make, model, serial number)	Yes No No	
Relay settings as per standard	Yes No No	
Relay pickup tests	Yes No No	
GPR – ROCOF (setting)	Yes 🗌 No 🗌	
GPR – directional power (setting)	Yes No No	N/A 🗆
GPR – negative sequence voltage (setting)	Yes No No	N/A 🗆

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All questions in each applicable section must be answered.

System Details	Complies	Data, provide details (attach docs if required)				
GPR – negative sequence current (setting)	Yes No No	N/A 🗌				
Comments (please supply additional information for any non-compliances and settings as required)						
Commissioning results attached Power Quality	Yes	□ No □				
System Details	Complies	Data, provide details (attach docs if required)				
Flicker	Yes No No					
Harmonics emissions levels (Testing not required if no power electronic converter present)	Yes No No					
Voltage Unbalance (%)	Yes No No					
Power Factor	Yes No No					
Copy of Test Certificates attached Interlocking N/A	Yes	□ No □				
System Details	Complies	Data, provide details (attach docs if required)				
Manual (Key based) or	Yes No No					
Automated	Yes No No					
Prior approved automated design attached	Yes	□ No □				

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Embedded Generation via Rotating Machine LV Connection >30 kVA and ≤1,500 kVA



All questions in each applicable section must be answered.

Attachment 4 – As Commissioned Drawings

Single Line Diagram and AC Schematics should include

	1.	RPEQ Signature		
	2.	NMI, Site name and address		
	3.	GPR settings		
	4.	Inverter protection details		
Single Line Diagram (SLD) attached		Yes 🗌	No 🗌	
AC schematics attached			Yes 🗌	No 🗌

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